

Three new deep-water miters (Gastropoda: Prosobranchia: Mitridae) from the Western Indo-Pacific with a new name for *Mitra millepunctata* Schepman, 1911

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ABSTRACT. *Domiporta dianneae* n. sp. is described from the Indo-Pacific and compared to *Domiporta signillata* (Azuma, 1965). *Scabricola splendidula* n. sp., from the Philippines and Solomon Islands is compared to *Scabricola coriacea* (Reeve, 1845), *Neocancilla clathrus clathrus* (Gmelin, 1791) and *Neocancilla maculosa* (Gmelin, 1791). *Mitra (Mitra) heinickei* n. sp. from the Philippine Islands is compared to *Mitra (Mitra) maui* Kay, 1979 and *Ziba? rehderi* (J. H. Webb, 1958). A new record and range for *Mitra (Mitra) maui* Kay, 1979 is reported. *Mitra (Mitra) millepunctata* Schepman, 1911 (non *Mitra millepunctata* Sowerby, 1889) is given a new name: *Mitra (Mitra) schepmani*.

INTRODUCTION

The number of mitriform gastropods collected in deep-water by tangle-net fishermen in the Philippine Islands is remarkable. Recently, Turner (2001) described two very large mitrid species from the Philippine Islands. Additional deep-water mitriform gastropods have recently been collected there. One of these new species described herein was first discovered attached to a Carrier shell (*Xenophora pallidula* Reeve, 1842), purchased from dealers who obtained the Carrier shell from a Philippine tangle-net fisherman. The molluscan fauna found in deep-water throughout the Western Pacific, which includes Japan, Philippines and New Caledonia is extremely diverse. In the depths below scuba range 100 to 300 meters an entirely new ecosystem exists. This region is rich in molluscan fauna.

Abbreviations

ANSP: Academy of Natural Sciences, Philadelphia, Penn., USA
BPBM: Bernice P. Bishop Museum, Honolulu, Hawaii, USA
MNHN: Museum national d'Histoire naturelle, Paris, France
ZMA: Zoological Museum, Amsterdam, Netherlands

SYSTEMATICS

Family MITRIDAE Swainson, 1831
Subfamily IMBRICARIINAE Troschel, 1867
Genus *Domiporta* Cernohorsky, 1970

Type species by original designation: *Voluta filaris* Linneaus, 1771. Recent, Indo-Pacific.

***Domiporta dianneae* n.sp.**
Figs. 1 - 2, 10 -13, 33

Type material. Holotype MNHN (Figs. 1, 2). Length 20.47 mm, width 7.31 mm, aperture 12.08 mm. Aliquay Isl., Sulu Sea, Philippines, On hard sandy mud, 240 to 300 meters, associated with volcanic stones. Ex. E. Guillot de Suduiraut coll. # 1201A.

Paratype # 1, (Fig. 33). Length 16.32 mm, width 5.95 mm, aperture 9.75 mm. Aliquay Isl., Sulu Sea, Philippines. On hard sandy mud, 240 to 300 meters associated with volcanic stones. E. Guillot de Suduiraut coll. # 1201B.

Paratype # 2, (Figs. 10, 11). Length 20.33 mm, width 7.36 mm, aperture 12.32 mm. Panglao Island, Philippines. Originally attached to *Xenophora pallidula* Reeve, 1842, 183 meters, May 1979. Salisbury coll.

Paratype # 3, (Figs. 12, 13). Length 14.63 mm, width 4.75 mm, aperture 7.58 mm. Off Balicasag Isl., Bohol, Philippines. On sandy mud, 180 meters associated with volcanic stones. ANSP # 410274.

Paratype # 4, Length 20.2 mm, width 7.0 mm, aperture 11.7 mm. Off Cape Shio, southernmost Kii Peninsula, Wakayama Prefecture, Japan, 80-100 meters, dead collected. Mr. Kazutaka Noda coll.

Paratype # 5, Length 15.4 mm, width 5.5 mm, aperture 9.0 mm. Off Cape Shio, southernmost Kii Peninsula, Wakayama Prefecture, Japan, 80-100 meters, dead collected. Coll. Mr. Kazutaka Noda.

Type locality. Aliquay Isl., Sulu Sea, Philippine Islands.

Habitat. On sandy mud, 80 to 300 meters associated with volcanic stones.

Range. Known from the Philippine Islands and Japan, in 80-300 m.

Description. Shell small, to approximately 21 mm in length. Fusiform, solid, spire acuminate, aperture longer than spire, protoconch of three to three and a half, white glassy whorls (Fig. 12). Teleoconch consists of 6 nearly straight-sided whorls, first spire whorl encircled with 3 round rows of cords; first, sub-sutural cord slightly smaller; cords separated by deep, punctate spiral grooves. Early whorls with 3 or 4 rows of round spiral cords with a weak subsutural pustulate thread, becoming more prominent on later whorls. Overall sculpture consists of round spiral cords divided by deep spiral grooves. Sutures shallow but well defined by a subsutural pustulate thread. Body whorl sculptured with 17 or 18 round, spiral cords. Spiral cords round near suture, becoming flatter and wider towards base, cords separated by deep single punctate spiral groove, occasionally between the first few cords with a double punctate spiral groove. Aperture narrow, smooth within, outer lip thin and finely crenulate. Columella with 5, white, rounded, oblique folds (teeth). Siphonal canal narrow; anal notch very deep, base sharply acuminate. Shell white, cords on all whorls distinctively colored, each cord outlined with two reddish-brown lines, interrupted with narrow white spaces on all cords, giving cords a dashed appearance. Body whorl with two bands formed by diffusion of reddish-brown lines into center of cord, first band located at periphery of shell and second in area opposite first and second columellar folds. Base of shell white.

Remarks. This shell is like other *Domiporta* species in having raised spiral cords, which are decorated with a solid or interrupted color pattern on the apex of the cord. It is compared to *Domiporta sigillata* (Azuma, 1965) (Figures 14, 15). It differs in being slightly smaller, more rounded in outline, lacking a distinctive shoulder, cords are more uniform in size, lacking spiral threads between cords, colored with interrupted dark brown dashes which give the cords a distinctive outlined appearance. *Domiporta sigillata* is light brown in color with longitudinal streaks of white or brown, cords are beaded.

Etymology. Named in honor of the wife of the first author, Dianne Salisbury, who purchased in May 1979 the Carrier Shell, *Xenophora pallidula* Reeve, 1842 to which the first known specimen (Figs. 10, 11) was attached.

Genus *Scabricola* Swainson, 1840

Type species by subsequent designation (Gray, 1847), *Mitra serpentina* Lamarck, 1811, = *Voluta variegata* Gmelin, 1791. Recent, Indo-Pacific.

***Scabricola splendidula* n. sp.**

Figures 3-4, 16, 18, 25

Type material. Holotype MNHN (Figures 3, 4). Length 11.66, width 4.18, aperture 6.18 mm. Balicasag Island, Bohol, Philippines, in sand, 160 meters, March, 2000.

Paratype # 1, (Figures 16). Length 11.45, width 3.94, aperture 5.89 mm. Balicasag Island, Bohol, Philippines, in sand, 160 to 180 meters, E. Guillot dc Suduiraut coll. # 1159.

Paratype # 2, (Figure 18) Length 12.60, width 4.26, aperture 7.24 mm. Ngella Island (Florida Is.), Solomon Islands, September 1983, leg. Joyce & Del Stone, in sand, 20 meters. Salisbury coll.

Paratype # 3, Length 12.08, width 4.19, aperture 6.04 mm. Ngella Island (Florida Is.), Solomon Islands, September, 1983, leg. Joyce & Del Stone, in sand, 20 meters. ANSP # 410273.

Paratype # 4, (Figure 25), Length 9.28 mm, width 3.36 mm, aperture 5.05 mm. Cebu Island, Philippines, May, 1979, in fishnets, 183 meters. Turner coll.

Paratype # 5, Length 10.87 mm, width 3.92 mm, aperture 5.78 mm. Balicasag Island, Bohol Id., Philippines. Deynzer coll.

Type locality. Balicasag Island, Panglao, Bohol, Philippine Islands, in sand, 160 meters.

Habitat. In sand, 20 to 183 meters.

Range. Philippine Islands and the Solomon Islands, 20-183 m.

Description. Shell small, to approximately 15 mm. Fusiform, solid, spire acuminate, spire shorter than aperture, protoconch of four and a half, mammilate, smooth, reddish-brown, glassy whorls. Teleoconch consists of 6 or 7 nearly straight-sided whorls. First spire whorl encircled with 3, rounded rows of pustulate cords, first sub-sutural cord smallest. Spire whorls with 3 or 4 rows of spiral cords, subsutural cord always smallest. Overall sculpture consists of spiral cords outlined by deep spiral grooves, cords being bisected by deep longitudinal grooves, giving the shell a nodulose or beaded appearance. Sutures undulate as the nodulose cord overlaps the suture. Body whorl sculptured with 13 to 15 pustulate, spiral cords. Spiral cords strongly pustulate near suture, becoming flatter and squarish towards base. Aperture narrow, smooth within, outer lip finely crenulate, becoming pustulate in adult shells. Columella with 5, white, rounded, oblique

folds (teeth). Shell white, early whorls reddish-brown with scattered white spots, penultimate whorl white with a few reddish-brown streaks and spots. Body whorl white with three indistinct reddish-brown zones or bands. First band consists of a few reddish-brown spots below suture, center of body whorl with a wide, reddish-brown band, upper portion of band with a single cord with alternating white and brown spots, base of shell reddish-brown, with or without additional white and brown alternating cord.

Remarks. The sculpture, shape and outline of the body whorl are typical of a *Scabricola* species. It is similar to *Scabricola coriacea* (Reeve, 1845) (Fig 17), being much smaller, more acuminate, more rounded in outline, with two white bands on the body whorl. Because of the small adult size of this species it could easily be confused with immature *Neocancilla clathrus clathrus* (Gmelin, 1791)(figure 23) and *Neocancilla maculosa* (Gmelin, 1791) (figure 24). The narrow aperture, more elongate, less bulbous outline of an adult *Scab. splendidula*, (fig. 25), is compared to an wide-aperture, immature, specimen of *Neo. clathrus clathrus* (fig 26). Color of the new species is light to dark brown with a white band on the body whorl below the suture. Immature *Neo. clathrus clathrus* are white, the lower body whorl is pink to red with brown spots at the periphery of the shell. Specimens of *Scabricola splendidula* from the Solomon Islands (fig 18) are lighter in color, somewhat larger than Philippine specimens and from much shallower depths.

Etymology. *Splendidula* (Latin) Adjective, meaning splendid or magnificent.

Subfamily **MITRINAE** Swainson, 1831

Genus ***Mitra*** Lamarck, 1798

Subgenus ***Mitra*** Lamarck, 1798

Type species by subsequent designation: *Voluta mitra* Linnaeus, 1758, Recent, Indo-Pacific.

***Mitra (Mitra) heinickei* n. sp.**

Figs. 7-8, 19-20, 22, 31-32

Ziba rehderi Cernohorsky, 1991: 47-48, pl. 39, figs. 3, 4 [non *Mitra (Tiara) rehderi* J. H. Webb, 1958]

Type material. Holotype ANSP # 410272 (Figures 7-8, 22), length 30.6 mm, width 8.21 mm, aperture 14.9 mm. Panglao, Bohol Is., Philippines, in tangle nets, 183 meters. Ex. Heinicke coll.

Paratype # 1. Length 30.36 mm, width 8.05 mm, aperture 14.72 mm. Aliguay Isl., Sulu Sea, Mindanao, Philippines, on sandy mud, 240 meters (live collected). E. Guillot de Suduiraut coll.

Paratype # 2. (Figures 19-20). Length 24.65 mm, width 6.67 mm, aperture 12.17 mm. Aliguay Isl., Sulu Sea, Mindanao, Philippines, on sandy mud, 240 meters. Ex. E. Guillot de Suduiraut coll. #1155A. Salisbury Coll.

Paratype # 3. Length 23.12 mm, width 6.42 mm, aperture 11.80 mm. Aliguay Isl., Sulu Sea, Mindanao, Philippines, on sandy mud, 240 meters. Ex. E. Guillot de Suduiraut coll. #1155B. Salisbury Coll.

Paratype # 4. MNHN, Length 30.92 mm, width 7.83 mm, aperture 15.1 mm. Balicasag Isl., Bohol, Philippines, on sandy mud, 240 meters. Ex. E. Guillot de Suduiraut coll. #1201A.

Paratype # 5. Length 23.31 mm, width 6.65 mm, aperture 11.20 mm. Balicasag Isl., Bohol, Philippines. On sandy mud, 240 meters, E. Guillot de Suduiraut coll. #1201B.

Paratypes # 6-11. Balicasag Isl., Bohol, Philippines, tangle nets at 200 meters. Al & Bev Deynzer coll.

Table of sizes for paratypes:

Paratype #6: length 38.0 mm, width 9.3 mm, aperture 17.5 mm.

Paratype #7: length 35.6 mm, width 8.8 mm, aperture 17.5 mm.

Paratype #8: length 33.5 mm, width 8.4 mm, aperture 17.2 mm.

Paratype #9: length 33.4 mm, width 8.4 mm, aperture 17.5 mm.

Paratype #10: length 27.6 mm, width 7.3 mm, aperture 13.3 mm.

Paratype #11: length 25.5 mm, width 7.3 mm, aperture 13.0 mm.

Paratype # 12: length 27.9 mm, width 7.1 mm, aperture 14.6 mm. Aliguay Isl., Mindanao, Philippines, 240 m, muddy sand, tangle nets. J. C. Martin coll. # 9161.

Paratype # 13: length 33.8 mm, width 9.0 mm, aperture 13.7 mm. Bohol, Balicasag Isl., Philippines, 180 m, tangle nets. J. C. Martin coll. # 1463.

Type locality. Balicasag Isl., Bohol, Philippine Islands.

Habitat. In sand and rubble, 180 to 240 meters.

Range. Philippine Islands, in 180-240 m.

Description. Shell of medium size to 30mm, fusiform, protoconch of 4 to 4 ½ purple, glassy whorls. Early whorls with 4 to 6 flat-topped spiral cords. Cords weakly bisected by longitudinal grooves giving some cords a segmented appearance. Interstices, between ribs with close-set, deeply punctate grooves, giving edges of cords a scalloped appearance under magnification. Outline of sides nearly straight, suture distinct, shallow. Body whorl with 16 to 20 flat-topped spiral cords. Cords of uniform size throughout body whorl. Cords separated by deep punctate spiral grooves, punctations gradually grow weaker towards base. Aperture narrow, smooth within. Columella with 4 or 5 folds (teeth). Shell white with raised, spiral cords, cords

brown, interrupted by white flame-like longitudinal streaks, aperture ivory-white, apex of shell stained dark-purple, stain wears off leaving an opaque-white protoconch. Animal: sole of foot milky-white, upper foot white, mottled with red-brown spots, streaks and blotches; eyestalks mostly brown with some tiny white spotting, siphon white with dense red-brown spots.

Remarks. *Mitra heinickei* n. sp. has been confused with *Mitra (Tiara) rehderi* J. H. Webb, 1958 (Fig. 9, holotype). *M. heinickei* differs from *M. rehderi* in being smaller, more slender, less sculptured and without a channeled suture. This species is perhaps most closely related to *M. maui* Kay, 1979 (Figure 21, holotype), reported herein for the first time from the Philippine Islands. Comparison of the holotype of both species (Figures 21, 22) illustrate that *M. heinickei* is generally smaller, more slender, with cords closer together and flatter; the color pattern of the two species differs, *M. maui* having interrupted brown dashes on the tops of the cords. *M. heinickei* having nearly solid brown lines on the tops of the cords, interrupted only by thin, white longitudinal flames crossing the body whorl cords. A live collected specimen (Figs. 19, 20) has an intact, thin, transparent yellow periostracum. The three species, all from the Philippines, are illustrated in figures 27-32 (same magnification) clearly showing the relative sizes, shapes and sculptures of each.

Etymology. Named in honor of Mr. Hans-Heinrich Heinicke of Bremen, Germany for bringing this species to the attention of the senior author many years ago.

***Mitra (Mitra) schepmani* new name**
Figures 5, 6

Synonymy

Mitra millepunctata Schepman, 1911: 268, pl. 22, fig. 5, (non *Mitra millepunctata* Sowerby, 1889).

Mitra millepunctata – Cernohorsky, 1991: pl. 39, figs. 5, 6, (holotype).

Ziba rehderi – Cernohorsky, 1991: pl. 39, figs. 3, 4, 7, 8 [non *Mitra (Tiara) rehderi* J. H. Webb, 1958].

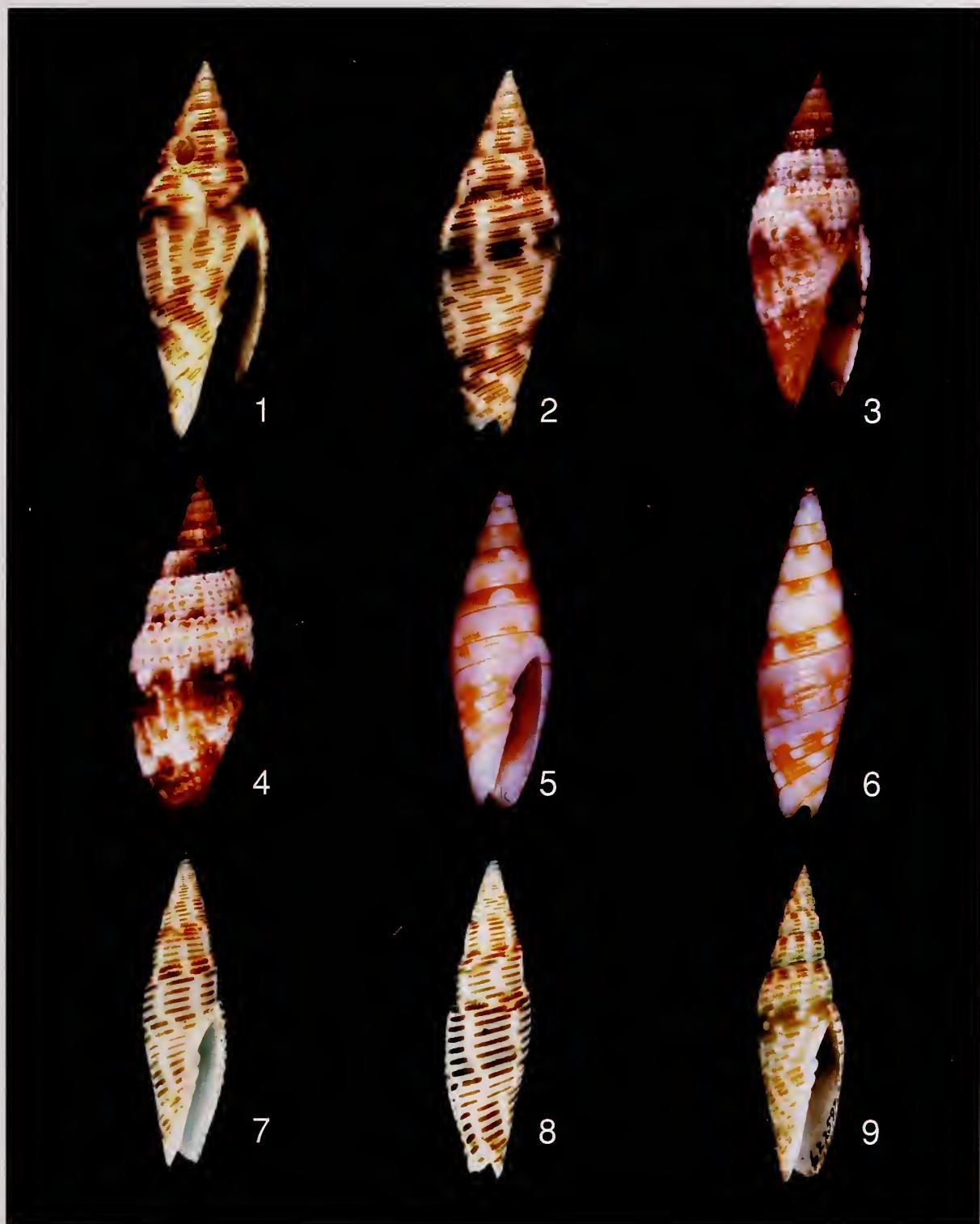
Figures 1-9

- 1-2. *Domiporta dianneae* n. sp. Holotype MNHN. Length 20.3 mm. Aliguay Isl., Sulu Sea, Philippines. On hard sandy mud. 240 to 300 meters, associated with volcanic stones.
- 3-4. *Scabricola splendidula* n. sp. Holotype MNHN. Length 11.66 mm. Balicasag Island, Bohol, Philippines.
- 5-6. *Mitra schepmani* new name. Live collected specimen, length 17.04 mm, width 4.99 mm, aperture 8.52 mm, Lagon N., New Caledonia, dredged 180-300 meters, JC Martin coll. #9108 and photo.
- 7-8. *Mitra heinickei* n. sp. Holotype ANSP 410272. Length 30.6 mm, width 8.21 mm, aperture 14.9 mm. Panglao, Bohol Is., Philippines, in tangle nets, 183 meters. Ex. Heinicke coll.,
9. *Mitra (Tiara) rehderi* J. H. Webb, 1958. Holotype USNM 622597, 44.6 mm. Tosa Bay, Japan.

Remarks. This species was originally described based on a single specimen, collected during the Siboga Expedition. Size given was length 23 mm, width 7 3/4 mm, aperture about 10 mm. The shell was badly damaged, with a huge predator hole in the body whorl, the outer lip broken and missing, the base of the shell broken off. The holotype appears to be faded, being described as "whole shell is ivory-white, with a row of subsquare yellowish-brown spots below the suture". The original type figured in Schepman 1911 (pl. 22, fig. 5) shows a series of dark spiral lines on the body whorl which are not mentioned in the original description. These same lines are visible on the holotype as faint faded spiral lines. Recently Mr. Jean-Claude Martin, of Nice, France has brought a live collected specimen from deep-water, off New Caledonia, to the attention of the authors.

The species is herein renamed *Mitra (Mitra) schepmani* new name, in honor of Mr. M. Schepman.

Re-description. Shell of medium size, to 23 mm in length, elongate-fusiform, spire acuminate. Protoconch of 4 1/2, light red-brown glassy whorls. Teleoconch whorls number 7 or 8, spire outline slightly convex, sutures finely crenulate, well defined, early spire whorls sculptured with 4-6 punctate spiral grooves and 4-7 flat spiral cords, longitudinally bisected by deep grooves which often join or link punctations, giving the shell a fine clathrate sculpture. Spiral cords of different sizes, smallest below suture, largest at periphery of whorl, spire whorls with 1 or 2 brown lines which follow spiral grooves. Body whorl with 3 or 4, narrow, close set, clathrate cords below suture. Remaining cords numbering 11-12 wide, flat with longitudinal grooves becoming obsolete, often bisected by a very weak punctate spiral groove near center of each cord. Aperture equal to or smaller than half shell length, 4 or 5 columella folds (teeth), outer lip smooth, simple, straight, siphonal canal short, open, siphonal notch generally deep. Shell white, with 3 brown bands, large white, nebulous spots appearing in brown bands, faded shells having large brown spots at suture, 7 or 8 spiral brown lines which generally follow spiral grooves; some specimens with brown lines not associated with grooves. Siphonal fasciole white, fresh specimens with faint pink or lavender tinge, aperture white with light brown color deep within aperture.



Type material

Holotype Zoological Museum of Amsterdam, Netherlands.

Type locality

Station 98, 6° 9' N, 102° 21' E, Sulu Archipelago, Philippines Islands, 350 m, sand.

Additional material studied

New Caledonia. BLOCAL: stn DW 38, 23° 00"S, 167° 15"E, 360 meters - 1 sp.

MUSORSTOM 4: Stn DW 184, 19° 04"S, 163° 27"E, 260 meters, 1 sp. - Stn DW 234, 22° 15"S, 167° 08"E, 350-365 meters, 1 sp.

CHALCAL 2: Stn DW 69, 22° 44"S, 168° 08"E, 260 meters, 6 sp.

SMIB 5: Stn DW 88, 22° 19"S, 168° 40"E, 350 meters, 2 sp.; Stn DW 102, 23° 20"S, 168° 05"E, 305 meters, 1 sp.

MUSORSTOM 6: Stn DW 392, 20° 47"S, 167° 05"E, 340 meters, 4 sp. - Stn DW 399, 20° 42"S, 167° 00"E, 282 meters, 5 sp. - Stn DW 417, 20° 42"S, 167° 04"E, 283 meters, 2 sp. - Stn DW 418, 20° 42"S, 167° 03"E, 283 meters, 4 sp. - Stn DW 423, 20° 26"S, 166° 41"E, 280 meters, 1 sp. - Stn DW 440, 20° 49"S, 167° 17"E, 288 meters, 1 sp. - Stn DW 451, 20° 59"S, 167° 25"E, 330 meters

1 sp. - Stn DW 480, 21° 08"S, 167° 56"E, 380 meters, 3 sp. - Stn DW 485, 21° 23"S, 167° 59"E, 350 meters, 1 sp. - Stn DW 487, 21° 23"S, 167° 46"E, 500 meters, 1 sp. Stn DW 487, 21° 23"S, 167° 46"E, 500 meters, 1 sp.

VOLSMAR: HUNTER et MATTHEW Volcanos Stn DW 17, 22° 23"S, 171° 41"E, 260-300 meters, - 6 sp.

BERYX 11: Stn DW 11 CP 23, 24° 44"S - 24° 43"S, 168° 10" - 168° 08"E, 270-350 meters, 8 sp.

SMIB 8: Stn DW 160, 24° 47"S, 168° 08"E, 280-282 meters, 1 sp. - Stn DW 165, 24° 47"S, 168° 10"E, 372-660 meters, 2 sp; Stn DW 177, 23° 39"S, 168° 00"E, 320-370 meters, 1 sp.

BATHUS 2: Stn DW 730, 23° 03"S, 168° 58"E, 397-400 meters, 2 sp.

BATHUS 3: Stn DW 827, 23° 22"S, 168° 01"E, 381-469 meters, 1 sp. - Stn DW 827, 23° 22"S, 168° 01"E, 381-469 meters, 6 sp. - Stn DW 829, 23° 21"S, 168° 02"E, 386-390 meters, 6 sp.

Stn DW 836, 23° 02"S, 166° 59"E, 295-306 meters, 1 sp.

New Caledonia or Vanuatu (accidentally mixed). BATHUS 2/MUSORSTOM 8: - 5 sp.

Coral Sea. MUSORSTOM 5: Stn 255, 25° 15"S, 159° 55"E, 280-295 meters, 13 sp. - Stn 256, 25° 18"S, 159° 53"E, 290-300 meters, 13 sp. - Stn 258, 25° 33"S, 159° 46"E, 300 meters, 8 sp. - Stn 265, 25° 21"S, 159° 45"E, 190-260 meters, 1 sp. - Stn 274, 25° 45"S, 159° 41"E, 285 meters, 1 sp. - Stn 277, 24° 11"S, 159° 35"E, 270 meters, 3 sp. - Stn 284, 24° 10"S, 159° 33"E, 225-230 meters, 1 sp. - Stn 289, 24° 02"S, 159° 38"E, 273 meters, 1 sp. - Stn 299, 22° 48"S, 159° 24"E, 360-390 meters, 2 sp. - Stn 302, 22° 10"S, 159° 23"E, 345-360 meters, 2 sp. - Stn 303, 22° 12"S, 159° 23"E, 332 meters, 2 sp.

South West Pacific. MUSORSTOM 7: Stn DW 510, 14° 14"S, 178° 11"W, 280-370 meters, 2 sp. - Stn DW 513, 14° 13"S, 178° 11"W, 260-300 meters, 1 sp. - Stn DW 516, 14° 13"S, 178° 12"W, 441-550 meters, 2 sp.

Vanuatu. MUSORSTOM 8: Stn DW 967, 20° 19"S, 169° 53"E, 295-334 meters, 4 sp. - Stn DW 988, 19° 16"S, 169° 24"E, 372-466 meters, 1 sp.

Fiji. BORDAU 1: Stn DW 1417, 16° 27"S, 178° 55"W, 353 meters, 2 sp. - Stn DW 1464, 18° 09"S, 178° 38"W, 285-300 meters, 3 sp. - Stn DW 1465, 18° 09"S, 178° 39"W, 290-300 meters, 1 sp. - Stn DW 1497, 18° 44"S, 178° 25"W, 335-350 meters, 3 sp. - Stn CP 1506, 18° 09"S, 178° 37"W, 294-300 meters, 1 sp.

Figures 10-18

10-11. *Domiporta dianneae* n. sp. Paratype # 2. Length 20.37 mm. Panglao Island, Philippines. Attached to *Xenophora pallidula* Reeve, 1842, 183 meters, May 1979. Salisbury coll.

12. *Domiporta dianneae* n. sp. Paratype # 3, Close-up of protoconch and early whorls. ANSP # 410274.

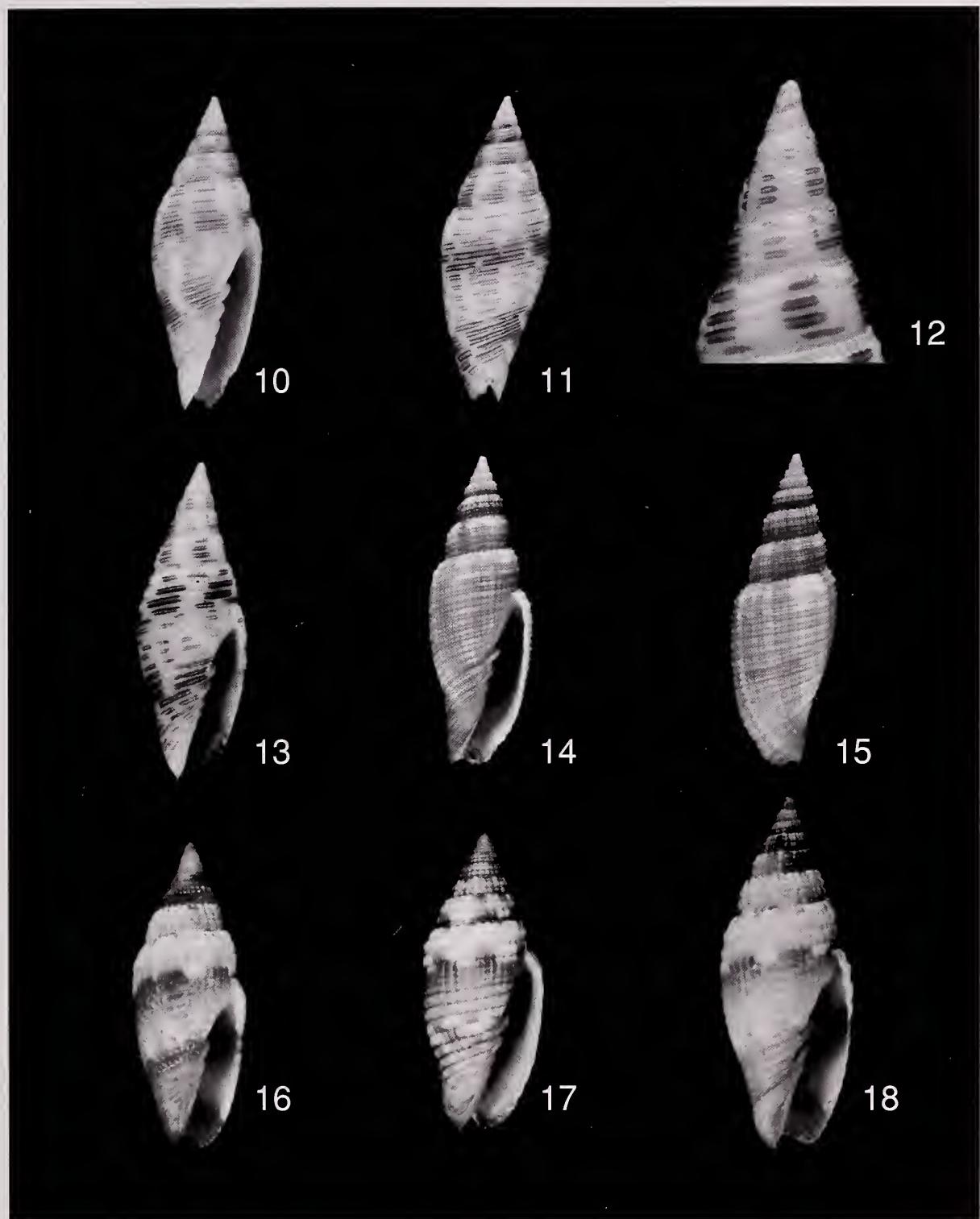
13. *Domiporta dianneae* n. sp. Paratype # 3. Length 14.63 mm. Off Balicasag Isl., Bohol, Philippines, on sandy mud, 180 meters, associated with volcanic stones. ANSP # 410274.

14-15. *Domiporta sigillata* (Azuma, 1965). Length 21.84 mm, shrimp trawlers, April 1999. John Wolff coll.

16. *Scabridcola splendidula* n. sp. Paratype # 1. Length 11.45 mm. Balicasag Island, Bohol, Philippines. Suduiraut coll # 1159.

17. *Scabridcola coriacea* (Reeve, 1845). ANSP 271917. Length 19 mm. New Caledonia.

18. *Scabridcola splendidula* n. sp. Paratype # 2. Length 12.60 mm, Ngella Island (Florida Is.), Solomon Islands. Salisbury coll.



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Dr. Philippe Bouchet of the Museum national d'Histoire naturelle, Paris, France has loaned to the authors for study a large number of specimens, which have been sorted and set aside by Yuri Kantor from Deep-Dredged lots taken in the years between 1986 to 1999 during the Museums many scientific collecting expeditions. Dr. Gary Rosenberg, Academy of Natural Sciences, Philadelphia, Pennsylvania, USA. Dr. Robert Cowie, Previously of the Bishop Museum, Honolulu, Hawaii for loan of type material. Mr. Hans-Heinrich Heinicke, Bremen, Germany. Our sincere thanks to the late Del Stone and his wife, Joyce Stone of Palm Springs, Ca, USA for donation of specimens now in the type lot of *Scabricola splendidula*. Dr. Hans Turner, Rovio, Switzerland for loan of specimens and review of this manuscript. Our sincere thanks to Mr. Rudy Sagarino, the fisherman who discovered additional specimens of *Dom. dianneae*. For loan of specimens: Mr. Jean-Claude Martin, Nice, France, Mr. John Wolff, Lancaster, Pennsylvania, USA; Jean Drivas, Greece; Mr. Kazutaka Noda, Gobo, Wakayama-ken, Japan; Mr. Al Deynzer, Sanibel Island, Florida.

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Figures 19-33

19-20. *Mitra heinickei* n. sp. Paratype #2. With periostracum. Length 24.65 mm, Aliguay Isl., Sulu Sea, Mindanao, Philippines. Salisbury coll.

21. *Mitra (Mitra) maui* Kay, 1979, holotype BPBM 9828. Length 29.0 mm. Off Kewalo, Oahu, Hawaii.

22. *Mitra heinickei* n. sp. Holotype ANSP 410272. Length 30.6 mm, Panglao, Bohol Is., Philippines, In tangle nets, 183 meters. Ex. Heinicke coll.

23. *Neocancilla clathrus clathrus* (Gmelin, 1791). Length 37.0 mm, In shallow sand pockets, 11 meters, Guam. Salisbury coll.

24. *Neocancilla maculosa* (Gmelin, 1791). Length 24.5 mm. In sand. 54 meters, Reunion Island. Jean Drivas coll.

25. *Scabricola splendidula* n. sp. Paratype # 4, (outer lip broken). Length 9.28 mm, Cebu Island, Philippines. Turner coll.

26. *Neocancilla clathrus clathrus* (Gmelin, 1791). Length 10.0 mm (juvenile), Orote Point, Guam. Salisbury coll.

27-28. *Mitra (Tiara) rehderi* J. H. Webb, 1958. Length 34.75 mm, Balicasag Is, Cebu, Philippines, on muddy sand, 240-280 meters. Suduiraut coll.

29-30. *Mitra (Mitra) maui* Kay, 1979. Length 36.41 mm. Aliguay Is., Mindanao, Philippines, on sandy mud, 240 meters. Suduiraut coll.

31-32. *Mitra (Mitra) heinickei*, Holotype ANSP 410272. Length 30.6 mm, width 8.21 mm, aperture 14.9 mm. Panglao, Bohol Is., Philippines, in tangle nets, 183 meters. Ex. Heinicke coll..

33. *Domiporta dianneae* n. sp. Paratype # 1. Length 16.32 mm. Aliguay Island, Sulu Sea, Philippines. On hard sandy mud, 240-300 meters. Suduiraut coll # 1201B.

